AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (Original) A communication system for sending a sequence of symbols on a communication link a sequence of symbols having values representative of said symbols, said communication system comprising a transmitter for placing information indicative of said sequence of symbols on said communication link and a receiver for receiving said information placed on said communication link by said transmitter, said transmitter comprising:

a clock for defining successive frames, each said frame comprising M time intervals, where M is an integer greater than 1;

a modulator modulating each of M carrier signals with a signal related to the value of one of said symbols thereby generating a modulated carrier signal corresponding to each of said carrier signals that is to be modulated and generating a sum signal comprising a sum of said modulated carrier signals, said modulator comprising a tree-structured array of filter banks having nodes, including a root node and M leaf nodes, each of said values related to said symbols forming an input to a corresponding one of said leaf nodes, each of said nodes, other than said leaf nodes, comprising one of said filter banks; and

an output circuit for transmitting said sum signal on said communication link, wherein said carrier signals comprise first and second carriers, said first carrier having a different bandwidth than said second carrier.

2. (Original) The communication system of claim 1 wherein said receiver comprises:

an input circuit for receiving and storing M time-domain samples transmitted on said communication link; and

a decoder for recovering said M symbol values, said decoder comprising a tree-structured array of sub-band filter banks, said received M time-domain samples forming the input of a root node of said tree-structured array of said decoder and said M symbol values being generated by the leaf nodes of said tree-

structured array of said decoder, each said sub-band filter bank comprising a plurality of FIR filters having a common input for receiving an input time-domain signal, each said filter generating an output signal representing a symbol value in a corresponding frequency band.

3. (Currently Amended) A communication system for sending a sequence of symbols on a communication link, said communication system comprising a transmitter for placing information indicative of said sequence of symbols on said communication link, said transmitter comprising:

a clock for defining successive frames, each said frame comprising M time intervals, where M is an integer greater than 1;

a modulator modulating each of M carrier signals with a signal related to the value of one of said symbols thereby generating a modulated carrier signal corresponding to each of said carrier signals that is to be modulated and generating a sum signal comprising a sum of said modulated carrier signals;

an output circuit transmitting said sum signal on said communication link, wherein said carrier signals comprise first and second carriers, said first carrier having a different bandwidth than said second carrier; and

a receiver comprising:

an input circuit for receiving and storing M time-domain samples transmitted on said communication link; and

a decoder for recovering said M symbol values, said decoder comprising a tree-structured array of sub-band filter banks, said received M time-domain samples forming the input of a root node of said tree-structured array said ~~decorder~~ decoder and said M symbol values being generated by the leaf nodes of said tree-structured array ~~decorder~~ decoder, each said sub-band filter bank comprising a plurality of FIR filters having a common input for receiving an input time-domain signal, each said filter generating an output signal representing a symbol value in a corresponding frequency band.

4. (Original) The communication system of claim 3 wherein said modulator comprises a tree-structured array of filter banks having nodes, including a root node and M leaf nodes, each of said values related to said symbols forming an

input to a corresponding one of said leaf nodes, each of said nodes, other than said leaf nodes, comprising one of said filter banks.

5. (Previously Presented) A tree-structured filter array having a plurality of levels of filter banks, the filter array comprising:

a first level of the plurality of levels comprising a filter bank having greater than two filters; and

a second level of the plurality of levels comprising a plurality of filter banks, wherein a first filter bank of the plurality of filter banks has a first number of filters and a second filter bank of the plurality of filter banks has a second number of filters, and wherein the first number of filters is different than the second number of filters.

6. (Currently Amended) The filter array of claim 5, wherein~~:~~

~~the first level comprises a filter bank having thirty two filters;~~

~~the second level comprises thirty two filter banks; and~~

~~two of the thirty two filter banks have eighteen filters and thirty of the thirty two filter banks have six filters~~

at least one of the filter banks is adapted to utilize cosine modulation.

7. (Previously Presented) The filter array of claim 5, wherein the filter array is adapted to process a sum of modulated carrier signals.

8. (Previously Presented) The filter array of claim 7, wherein the filter array is adapted to process the sum of modulated carrier signals by transforming the sum of modulated carrier signals into frequency domain symbols, wherein a first frequency domain symbol occupies a first bandwidth and a second frequency domain symbol occupies a second, different bandwidth.

9. (Previously Presented) The filter array of claim 7, wherein the sum of modulated carrier signals is transformed into frequency domain symbols, wherein a first frequency domain symbol occupies a first bandwidth and a second frequency domain symbol occupies a second, different bandwidth.

10. (Previously Presented) The filter array of claim 5, wherein at least one of the filter banks is adapted to generate polyphase components.

11. (Currently Amended) The filter array of claim 5, wherein the system is adapted to process an input signal by splitting the input signal into a plurality of non-uniform ~~subbands~~ sub-bands.

12. (Currently Amended) A tree-structured filter array comprising:

a plurality of levels, each of the plurality of levels comprising at least one filter bank having more than two filters;

a first of ~~the~~ a plurality of filter banks of one of the plurality of levels having a first number of filters; and

a second of the plurality of filter banks of the one of the plurality of levels having a second number of filters different from the first number of filters.

13. (Currently Amended) The filter array of claim 12, wherein~~:~~

~~the first level comprises a filter bank having thirty-two filters;~~

~~the second level comprises thirty-two filter banks; and~~

~~two of the thirty-two filter banks have eighteen filters and thirty of the thirty-two filter banks have six filters~~

at least one of the filter banks is adapted to utilize cosine modulation.

14. (Previously Presented) The filter array of claim 12, wherein the filter array is adapted to process a sum of modulated carrier signals.

15. (Previously Presented) The filter array of claim 14, wherein the filter array is adapted to process the sum of modulated carrier signals by transforming the sum of modulated carrier signals into frequency domain symbols, wherein a first frequency domain symbol occupies a first bandwidth and a second frequency domain symbol occupies a second, different bandwidth.

16. (Previously Presented) The filter array of claim 14, wherein the sum of modulated carrier signals is transformed into frequency domain symbols, wherein a

first frequency domain symbol occupies a first bandwidth and a second frequency domain symbol occupies a second, different bandwidth.

17. (Currently Amended) The filter array of claim 12, wherein at least one of the filter banks is adapted to generate ~~polyphase components~~ frequency components by cosine modulating polyphase components.

18. (Currently Amended) The filter array of claim 12, wherein the system is adapted to process an input signal by splitting the input signal into a plurality of non-uniform ~~subbands~~ sub-bands.

19. (Previously Presented) A tree-structured filter array comprising:

a plurality of filter banks, each of the plurality of filter banks having more than two filters;

a first of the plurality of filter banks having X filters;

a second of the plurality of filter banks having Y filters; and

a third of the plurality of filter banks having Z filters, wherein X, Y and Z are different numbers.

20. (Currently Amended) The filter array of claim [19] 10, wherein ~~the tree-structured array comprises one filter bank with 32 filters, two filter banks with 18 filters and 30 filter banks with six filters, wherein the two filter banks with 18 filters and the 30 filter banks with six filters are in the second level~~

said polyphase components are generated using a window comprising 512 samples.

21. (Previously Presented) The filter array of claim 19, wherein the filter array is adapted to process a sum of modulated carrier signals.

22. (Previously Presented) The filter array of claim 21, wherein the filter array is adapted to process the sum of modulated carrier signals by transforming the sum of modulated carrier signals into frequency domain symbols, wherein a first frequency domain symbol occupies a first bandwidth and a second frequency domain symbol occupies a second, different bandwidth.

23. (Previously Presented) The filter array of claim 21, wherein the sum of modulated carrier signals is transformed into frequency domain symbols, wherein a first frequency domain symbol occupies a first bandwidth and a second frequency domain symbol occupies a second, different bandwidth.

24. (Previously Presented) The filter array of claim 19, wherein at least one of the filter banks is adapted to generate polyphase components.

25. (Currently Amended) The filter array of claim 19, wherein the system is adapted to process an input signal by splitting the input signal into a plurality of non-uniform ~~subbands~~ sub-bands.

26. (Previously Presented) A tree-structured synthesis filter array comprising:

a plurality of levels of synthesis filter banks, each of the plurality of levels comprising at least one synthesis filter bank having more than two inputs;

a first level of the plurality of levels comprising a plurality of synthesis filter banks, a first synthesis filter bank of the plurality of synthesis filter banks having a first number of inputs and a second synthesis filter bank of the plurality of synthesis filter banks having a second number of inputs, and wherein the first number of inputs is different than the second number of inputs; and

a second level of the plurality of levels comprising a synthesis filter bank having greater than two inputs.

27. (Currently Amended) The synthesis filter array of claim 26, wherein~~:~~

~~the first level comprises thirty-two synthesis filter banks, wherein two of the synthesis filter banks have eighteen inputs and thirty of the synthesis filter banks have six inputs; and~~

~~the second level comprises a synthesis filter bank having thirty-two inputs~~

at least one of the synthesis filter banks is adapted to generate polyphase components.

28. (Previously Presented) The synthesis filter array of claim 26, wherein the system is adapted to process a compressed audio signal that has been decoded and dequantized.

29. (Previously Presented) The synthesis filter array of claim 26, wherein the system is adapted to process a sequence of symbols capable of being transmitted over a communications link.

30. (Previously Presented) The synthesis filter array of claim 26, wherein the tree-structured array is adapted to synthesize a decompressed audio signal.

31. (Previously Presented) The synthesis filter array of claim 26, wherein the system is adapted to modulate a first symbol onto a carrier having a first bandwidth, and a second symbol onto a carrier having a second, different bandwidth.

32. (Previously Presented) A tree-structured synthesis filter array comprising:

a plurality of levels of synthesis filter banks;

a first level of the plurality of levels comprising a plurality of synthesis filter banks, a first synthesis filter bank of the plurality of synthesis filter banks having a first number of filters and a second synthesis filter bank of the plurality of synthesis filter banks having a second number of filters, and wherein the first number of filters is different than the second number of filters; and

a second level of the plurality of levels comprising a synthesis filter bank having greater than two filters.

33. (Currently Amended) The synthesis filter array of claim 32, wherein~~:~~

~~the first level comprises thirty two synthesis filter banks,~~

~~two of the synthesis filter banks have eighteen filters and thirty of the synthesis filter banks have six filters; and~~

~~the second level comprises a synthesis filter bank having thirty two filters~~

at least one of the synthesis filter banks is adapted to transform frequency components into polyphase components by cosine modulating said frequency components.

34. (Previously Presented) The synthesis filter array of claim 32, wherein the system is adapted to process a compressed audio signal that has been decoded and dequantized.

35. (Previously Presented) The synthesis filter array of claim 32, wherein the system is adapted to process a sequence of symbols capable of being transmitted over a communications link.

36. (Previously Presented) The synthesis filter array of claim 32, wherein the tree-structured array is adapted to synthesize a decompressed audio signal.

37. (Previously Presented) The synthesis filter array of claim 32, wherein the system is adapted to modulate a first symbol onto a carrier having a first bandwidth, and a second symbol onto a carrier having a second, different bandwidth.

38. (Previously Presented) A tree-structured synthesis filter array comprising:

a plurality of synthesis filter banks, each of the plurality of synthesis filter banks having more than two filters;

a first of the plurality of synthesis filter banks having X filters;

a second of the plurality of synthesis filter banks having Y filters; and

a third of the plurality of synthesis filter banks having Z filters,

wherein X, Y and Z are different numbers.

39. (Currently Amended) The synthesis filter array of claim 38, wherein ~~the tree-structured array comprises one filter bank with 32 filters, two filter banks with 18 filters and 30 filter banks with six filters, wherein the two filter banks with 18 filters and the 30 filter banks with six filters are in the second level~~

at least one of the synthesis filter banks is adapted to generate polyphase components.

40. (Previously Presented) The synthesis filter array of claim 38, wherein the system is adapted to process a compressed audio signal that has been decoded and dequantized.

41. (Previously Presented) The synthesis filter array of claim 38, wherein the system is adapted to process a sequence of symbols capable of being transmitted over a communications link.

42. (Previously Presented) The synthesis filter array of claim 38, wherein the tree-structured array is adapted to synthesize a decompressed audio signal.

43. (Previously Presented) The synthesis filter array of claim 38, wherein the system is adapted to modulate a first symbol onto a carrier having a first bandwidth, and a second symbol onto a carrier having a second, different bandwidth.

44. (Currently Amended) A signal processing system comprising:

a tree-structured array comprising a plurality of levels, each of the plurality of levels comprising at least one filter bank having more than two filters;

a first of ~~the~~ a plurality of filter banks of one of the plurality of levels having a first number of filters; and

a second of the plurality of filter banks of the one of the plurality of levels having a second number of filters different from the first number of filters.

45. (Previously Presented) A signal processing system comprising:

a tree-structured array comprising a plurality of filter banks, each of the plurality of filter banks having more than two filters;

a first of the plurality of filter banks having X filters;

a second of the plurality of filter banks having Y filters; and

a third of the plurality of filter banks having Z filters, wherein X, Y and Z are different numbers.

46. (Previously Presented) A signal processing system comprising:

a tree-structured array comprising a plurality of levels, each of the plurality of levels comprising at least one filter bank;

a first of the plurality of levels comprising a filter bank having more than two filters; and

a second of the plurality of levels comprising a plurality of filter banks, wherein a first of the plurality of filter banks has a first number of filters and a second of the plurality of filter banks has a different number of filters from the first number of filters.

47. (Currently Amended) A signal processing system comprising:

a tree-structured array comprising a plurality of levels, each of the plurality of levels comprising at least one synthesis filter bank;

a first of ~~the~~ a plurality of synthesis filter banks of one of the plurality of levels having a first number of inputs; and

a second of the plurality of synthesis filter banks of the one of the plurality of levels having a second number of inputs different from the first number of inputs.

48. (Previously Presented) A signal processing system comprising:

a tree-structured array comprising a plurality of levels, each of the plurality of levels comprising at least one synthesis filter bank;

a first of the plurality of levels comprising a plurality of synthesis filter banks, wherein a first of the plurality of synthesis filter banks has a first number of inputs and a second of the plurality of synthesis filter banks has a second number of inputs different from the first number of inputs; and

a second of the plurality of levels comprising a synthesis filter bank having more than two inputs.

49. (Currently Amended) A content distribution system comprising:

a distribution medium; and

a portion of a compressed audio file at least one of stored on or transmitted over the distribution medium, wherein the audio file was created using a tree-structured array comprising a plurality of levels, each of the plurality of levels comprising at least one filter bank having more than two filters, wherein a first of ~~the~~

a plurality of filter banks of one of the plurality of levels has a first number of filters, and a second of the plurality of filter banks of the one of the plurality of levels has a second number of filters different from the first number of filters.

50. (Previously Presented) A content distribution system comprising:

a distribution medium; and

a compressed audio file at least one of stored on or transmitted over the distribution medium, wherein the audio file was created using a tree-structured array comprising a plurality of filter banks, each of the plurality of filter banks having more than two filters, wherein:

a first of the plurality of filter banks has X filters;

a second of the plurality of filter banks has Y filters; and

a third of the plurality of filter banks has Z filters, wherein X, Y and Z are different numbers.

51. (Currently Amended) An audio signal processing method comprising:

receiving an audio signal; and

splitting the audio signal into frequency components using a tree-structured array comprising a plurality of levels, each of the plurality of levels comprising at least one filter bank having more than two filters, wherein:

a first of ~~the~~ a plurality of filter banks of one of the plurality of levels has a first number of filters, and

a second of the plurality of filter banks of the one of the plurality of levels has a second number of filters different from the first number of filters.

52. (Currently Amended) The method of claim 51 wherein~~:~~

~~the tree-structured array comprises one filter bank with 32 filters, two filter banks with 18 filters and 30 filter banks with six filters, wherein the two filter banks with 18 filters and the 30 filter banks with six filters are in a the second level~~

at least one filter bank is adapted to generate polyphase components.

53. (Previously Presented) An audio signal processing method comprising:

receiving an audio signal; and

splitting the audio signal into sub-bands of unequal size using a tree-structured array comprising a plurality of filter banks, each of the plurality of filter banks having more than two filters, wherein:

a first of the plurality of filter banks has X filters,

a second of the plurality of filter banks has Y filters, and

a third of the plurality of filter banks has Z filters, wherein X, Y and Z are different numbers.

54. (Currently Amended) The method of claim 53 wherein~~:~~

~~the first filter bank has 32 filters;~~

~~the second filter bank has 18 filters; and~~

~~the third filter bank has 6 filters~~

at least one of the filter banks is adapted to generate sub-bands by cosine modulating polyphase components.

55. (Previously Presented) An audio signal processing method comprising:

receiving an audio signal; and

decomposing the audio signal into sub-band components using a tree-structured array comprising a plurality of levels, each of the plurality of levels comprising at least one filter bank having more than two filters, wherein a second of the plurality of levels comprises a plurality of filter banks, wherein a first of the plurality of filter banks has a first number of filters and a second of the plurality of filter banks has a different number of filters from the first number of filters.

56. (Currently Amended) The method of claim 55 wherein~~:~~

~~a first level filter bank has 32 filters; and~~

~~the second of the plurality of levels comprises thirty two filter banks, wherein 2 of the filter banks have 18 filters and 30 of the filter banks have 6 filters~~

at least one of the filter banks is adapted to utilize cosine modulation.

57. (Currently Amended) An audio signal processing method comprising:

receiving a compressed audio signal that has been decoded and dequantized; and

synthesizing a reconstructed audio signal using a tree-structured array comprising a plurality of levels, each of the plurality of levels comprising at least one synthesis filter bank having more than two inputs, wherein a first of ~~the~~ a plurality of synthesis filter banks of one of the plurality of levels has a first number of inputs and a second of the plurality of synthesis filter banks of the one of the plurality of levels has a second number of inputs different from the first number of inputs.

58. (Currently Amended) An audio signal processing method comprising:

receiving a compressed audio signal;

decoding said compressed audio signal;

dequantizing said decoded signal; and

synthesizing a reconstructed audio signal using a tree-structured array comprising a plurality of synthesis filter banks, each of the plurality of synthesis filter banks having more than two inputs, wherein:

a first of the plurality of synthesis filter banks has X inputs;

a second of the plurality of synthesis filter banks has Y inputs; and

a third of the plurality of synthesis filter banks has Z inputs, where X, Y and Z are different numbers.

59. (Currently Amended) An audio signal processing method comprising:

receiving a compressed audio signal that has been decoded and dequantized; and

reconstructing a representation of an original audio signal using a tree-structured array comprising a plurality of levels, each of the plurality of levels comprising at least one synthesis filter bank having more than two filters, wherein a first of the plurality of levels comprises a plurality of synthesis filter banks, wherein a first of the plurality of synthesis filter banks has a first number of inputs and a second of the plurality of synthesis filter banks has a second number of inputs different from the first number of inputs, and wherein a second of the plurality of levels comprises a synthesis filter bank having more than two inputs.

60. (Currently Amended) An audio signal processing method comprising:

receiving a compressed audio signal that has been decoded and dequantized; and

synthesizing a reconstructed representation of an original audio signal using a tree-structured array comprising a plurality of levels, each of the plurality of levels comprising at least one filter bank having more than two filters, wherein a first of ~~the~~ a plurality of synthesis filter banks of one of the plurality of levels has a first number of filters and a second of the plurality of synthesis filter banks of the one of the plurality of levels has a second number of filters different from the first number of filters.

61. (Currently Amended) An audio compression method comprising:

receiving an audio signal;

splitting the audio signal into frequency components using a tree-structured array comprising a plurality of levels, each of the plurality of levels comprising at least one filter bank having more than two filters, wherein a first of ~~the~~ a plurality of filter banks of one of the plurality of levels has a first number of filters, and a second of the plurality of filter banks of the one of the plurality of levels has a second number of filters different from the first number of filters;

quantizing said frequency components; and

coding said quantized frequency components.

62. (Currently Amended) An audio compression method comprising:

receiving an audio signal;

decomposing the audio signal into ~~frequency~~ sub-band components using a tree-structured array comprising a plurality of levels, each of the plurality of levels comprising at least one filter bank having more than two filters and a second of the plurality of levels comprises a plurality of filter banks, wherein a first of the plurality of filter banks has a first number of filters and a second of the plurality of filter banks has a different number of filters from the first number of filters;

quantizing said ~~frequency~~ sub-band components; and

coding said quantized ~~frequency~~ sub-band components.

63. (Previously Presented) An audio compression method comprising:

receiving an audio signal;

splitting the audio signal into ~~frequency components~~ sub-bands, said ~~frequency components~~ sub-bands representing the amplitude of the audio signal,

using a tree-structured array comprising a plurality of levels, each of the plurality of levels comprising at least one filter bank having more than two filters, and a second of the plurality of levels comprises a plurality of filter banks, wherein a first of the plurality of filter banks has a first number of filters and a second of the plurality of filter banks has a different number of filters from the first number of filters;

quantizing said ~~frequency components~~ sub-bands; and

coding said quantized ~~frequency components~~ sub-bands .

64. (Previously Presented) An audio decompression method comprising:

receiving a compressed audio signal;

decoding and dequantizing said compressed audio signal;

synthesizing a reconstructed audio signal using a tree-structured array comprising a plurality of synthesis filter banks, each of the plurality of synthesis filter banks having more than two inputs, wherein:

a first of the plurality of synthesis filter banks has X inputs;

a second of the plurality of synthesis filter banks has Y inputs; and

a third of the plurality of synthesis filter banks has Z inputs, where X, Y and Z are different numbers.

65. (Currently Amended) An audio decompression method comprising:

receiving a compressed audio signal;

decoding said compressed audio signal;

dequantizing said decoded signal;

synthesizing a reconstructed audio signal using a tree-structured array comprising a plurality of levels, each of the plurality of levels comprising at least one synthesis filter bank having more than two filters, wherein a first of ~~the~~ a plurality of synthesis filter banks of one of the plurality of levels has a first number of filters; and

a second of the plurality of synthesis filter banks of the one of the plurality of levels has a second number of filters different from the first number of filters.

66. (Previously Presented) A program product comprising:

an audio signal processing program, said audio signal processing program including a tree-structured array comprising a plurality of levels, each of the

plurality of levels comprising at least one filter bank having more than two filters, wherein a second of the plurality of levels comprises a plurality of filter banks, wherein a first of the plurality of filter banks has a first number of filters and a second of the plurality of filter banks has a different number of filters from the first number of filters; and

a signal bearing media bearing said audio signal processing program.

67. (Previously Presented) A program product comprising:

an audio signal processing program, said audio signal processing program including: a tree-structured array comprising a plurality of filter banks, each of said plurality of filter banks having more than two filters, a first filter bank of said plurality of filter banks having X filters, a second filter bank of said plurality of filter banks having Y filters, and a third filter bank having Z filters, where X, Y and Z are different numbers; and

a signal bearing media bearing said audio signal processing program.

68. (Currently Amended) A program product comprising:

an audio signal processing program, said audio signal processing program including: a tree-structured array comprising a plurality of levels, each of the plurality of levels comprising at least one synthesis filter bank having more than two inputs, wherein a first of ~~the~~ a plurality of synthesis filter banks of one of the plurality of levels has a first number of inputs; and a second of the plurality of synthesis filter banks of the one of the plurality of levels has a second number of inputs different from the first number of inputs; and

a signal bearing media bearing said audio signal processing program.

69. (Currently Amended) A program product comprising:

an audio signal processing program, said audio signal processing program including: a tree-structured array comprising a plurality of levels, each of the plurality of levels comprising at least one synthesis filter bank having more than two filters, wherein a first of ~~the~~ a plurality of synthesis filter banks has a first number of inputs and a second of the plurality of synthesis filter banks has a second number of inputs different from the first number of inputs, and wherein a second of the plurality of levels comprises a synthesis filter bank having more than two inputs; and

a signal bearing media bearing said audio signal processing program.

70. (Previously Presented) An information storage media having instructions for splitting an audio signal comprising:

information that is capable of using a tree-structured array comprising a plurality of levels, each of the plurality of levels comprising at least one filter bank having more than two filters, and a second of the plurality of levels comprises a plurality of filter banks, wherein a first of the plurality of filter banks has a first number of filters and a second of the plurality of filter banks has a different number of filters from the first number of filters.

71. (Previously Presented) An information storage media having instructions for performing a method of processing an audio signal comprising:

information that stores a tree-structured array comprising a plurality of filter banks, each of the plurality of filter banks having more than two filters, wherein

a first of the plurality of filter banks has X filters,

a second of plurality of filter banks has Y filters,

a third of the plurality of filter banks has Z filters; and

wherein X, Y and Z are different numbers.

72. (Previously Presented) An information storage media having instructions for performing a method of processing an audio signal comprising:

information that implements a tree-structured array to process the audio signal, said tree-structured array comprising a plurality of levels, each of the plurality of levels comprising at least one filter bank having more than two filters, and a second of the plurality of levels comprises a plurality of filter banks, wherein a first of the plurality of filter banks has a first number of filters and a second of the plurality of filter banks has a different number of filters from the first number of filters.

73. (Previously Presented) An information storage media having instructions for processing an audio signal comprising:

information to operate a tree-structured array comprising a plurality of filter banks, each of the plurality of filter banks having more than two filters, wherein

a first of the plurality of filter banks has X filters;

a second of plurality of filter banks has Y filters; and

a third of the plurality of filter banks has Z filters; and

wherein X, Y and Z are different numbers.

74. (Currently Amended) An information storage media having instructions for performing a method of processing a compressed audio signal that has been decoded and dequantized comprising:

information that is capable of using a tree-structured array comprising a plurality of levels, each of the plurality of levels comprising at least one synthesis filter bank having more than two filters, wherein a first of the plurality of levels comprises a plurality of synthesis filter banks, wherein a first of the plurality of synthesis filter banks has a first number of inputs and a second of the plurality of synthesis filter banks has a second number of inputs different from the first number of inputs, and wherein a second of the plurality of levels comprises a synthesis filter bank having more than two inputs.

75. (Currently Amended) An information storage media having instructions for processing a compressed audio signal comprising:

information decodes said compressed audio signal;

information that dequantizes said decoded signal; and

information that implements a tree-structured array comprising a plurality of synthesis filter banks, each of the plurality of synthesis filter banks having more than two inputs, wherein a first of the plurality of synthesis filter banks has X inputs, a second of the plurality of synthesis filter banks has Y inputs, and a third of the plurality of synthesis filter banks has Z inputs, where X, Y and Z are different numbers.

76. (Currently Amended) An information storage media having instructions for processing a compressed audio signal that has been decoded and dequantized comprising:

information that stores a tree-structured array comprising a plurality of levels, each of the plurality of levels comprising at least one synthesis filter bank having more than two filters, wherein a first of the plurality of levels comprises a plurality of synthesis filter banks, wherein a first of the plurality of synthesis filter

banks has a first number of inputs and a second of the plurality of synthesis filter banks has a second number of inputs different from the first number of inputs, and wherein a second of the plurality of levels comprises a synthesis filter bank having more than two inputs.

77. (Currently Amended) An information storage media having instructions for processing a compressed audio signal that has been decoded and dequantized comprising:

information that operates a tree-structured array comprising a plurality of levels, each of the plurality of levels comprising at least one synthesis filter bank having more than two filters, wherein a first of the plurality of levels comprises a plurality of synthesis filter banks, wherein a first of the plurality of synthesis filter banks has a first number of inputs and a second of the plurality of synthesis filter banks has a second number of inputs different from the first number of inputs, and wherein a second of the plurality of levels comprises a synthesis filter bank having more than two inputs.

78. (Currently Amended) A computer-readable medium having stored thereon a data structure relating to ~~32~~ a multitude of frequency sub-bands of an audio signal comprising:

a first portion containing data representing ~~36~~ low frequency sub-bands ~~associated with 2 of the 32 frequency sub-bands having the lowest frequencies~~; and

a second portion containing data representing ~~180 frequency sub-bands~~ higher frequency sub-bands ~~associated with 30 of the 32 frequency sub-bands having the lowest frequency~~.

79. (Previously Presented) An audio signal processing protocol comprising:

splitting the audio signal using a tree-structured array comprising a plurality of filter banks, each of the plurality of filter banks having more than two filters;

a first of the plurality of filter banks having X filters;

a second of the plurality of filter banks having Y filters; and

a third of the plurality of filter banks having Z filters, wherein X, Y and Z are different numbers.

80. (Currently Amended) An audio compression protocol comprising:

receiving an audio signal;

splitting the audio signal into ~~frequency~~ sub-band components using a tree-structured array comprising a plurality of levels, each of the plurality of levels comprising at least one filter bank;

a first of the plurality of levels comprising a filter bank having more than two filters; and

a second of the plurality of levels comprising a plurality of filter banks, wherein a first of the plurality of filter banks has a first number of filters and a second of the plurality of filter banks has a different number of filters from the first number of filters;

quantizing said ~~frequency~~ sub-band components; and

removing redundancy from said quantized ~~frequency~~ sub-band components using coding.

81. (Currently Amended) A signal decompression protocol comprising:

receiving a compressed audio signal that has been decoded and dequantized; and

synthesizing the audio signal using a tree-structured array comprising a plurality of levels, each of the plurality of levels comprising at least one synthesis filter bank having more than two filters, wherein a first of the plurality of levels comprises a plurality of synthesis filter banks, wherein a first of the plurality of synthesis filter banks has a first number of inputs and a second of the plurality of synthesis filter banks has a second number of inputs different from the first number of inputs, and wherein a second of the plurality of levels comprises a synthesis filter bank having more than two inputs.

82. (Previously Presented) A protocol for processing compressed audio comprising:

decoding and dequantizing the compressed audio signal; and

synthesizing the decoded and dequantized audio signal using a tree-structured array of filter banks, where the number of filters in each filter bank is greater than two, and the number of filters in at least one of the filter banks is different from the number of filters in another filter bank within a same layer of the array.

83. (Currently Amended) A compressed audio file generated according to a process comprising:

receiving an audio signal; and

splitting the audio signal into frequency components using a tree-structured array comprising a plurality of synthesis filter banks, each of the plurality of synthesis filter banks having more than two inputs, wherein:

a first of the plurality of synthesis filter banks has X inputs;

a second of the plurality of synthesis filter banks has Y inputs; and

a third of the plurality of synthesis filter banks has Z inputs, where X, Y and Z are different numbers.

84. (Currently Amended) A data structure recorded on a media comprising:

audio data that has been:

split into frequency components using a tree-structured array comprising a plurality of levels, each of the plurality of levels comprising at least one filter bank having more than two filters, wherein a first of ~~the~~ a plurality of filter banks of one of the plurality of levels has a first number of filters, and a second of the plurality of filter banks of the one of the plurality of levels has a second number of filters different from the first number of filters;

quantized; and

coded, resulting in a compressed audio data structure.

85. (Currently Amended) An audio signal processing system comprising:

a receiver that receives an audio signal; and

a tree-structured array that splits said audio signal into unequal ~~subbands~~ sub-bands, said tree structured array comprising a plurality of levels, each of the plurality of levels comprising at least one synthesis filter bank, wherein a first of ~~the~~ a plurality of synthesis filter banks of one of the plurality of levels having a first

number of inputs, and a second of the plurality of synthesis filter banks of the one of the plurality of levels having a second number of inputs different from the first number of inputs.

86. (Currently Amended) An audio compression system comprising:

a receiver that stores a portion of an audio signal;

a tree-structured array that splits said audio signal into frequency components, said tree structured array comprising a plurality of levels, each of the plurality of levels comprising at least one synthesis filter bank, wherein a first of ~~the~~ a plurality of synthesis filter banks of one of the plurality of levels having a first number of inputs, and a second of the plurality of synthesis filter banks of the one of the plurality of levels having a second number of inputs different from the first number of inputs;

a quantizer that replaces each of said frequency components by one of a plurality of approximations thereto; and

a coder that removes redundancy from said quantized frequency components.

87. (Currently Amended) An audio decompression system comprising:

a receiver that stores a portion of a compressed audio signal;

a decoder that recovers quantized signal values;

a dequantizer that generates approximations to filtered signal values; and

a synthesis filter array that synthesizes a reconstructed audio signal from said approximations into filtered signal values using a tree-structured array comprising a plurality of synthesis filter banks, each of the plurality of synthesis filter banks having more than two inputs, wherein a first of the plurality of synthesis filter banks has X inputs, a second of the plurality of synthesis filter banks has Y inputs, and a third of the plurality of synthesis filter banks has Z inputs, where X, Y and Z are different numbers.

88. (New) The synthesis filter array of claim 26, wherein at least one of the synthesis filter banks is adapted to utilize cosine modulation.

89. (New) The synthesis filter array of claim 39, wherein said polyphase components are generated using a window length of 512 samples.

90. (New) The signal processing system of claim 44, wherein at least one of the filter banks utilizes cosine modulation.

91. (New) The signal processing system of claim 45, wherein at least one of the filter banks generates polyphase components.

92. (New) The signal processing system of claim 46, wherein at least one of the filter banks generates polyphase components utilizing a filter with 512 coefficients.

93. (New) The signal processing system of claim 47, wherein at least one of the synthesis filter banks employs polyphase components generated using a window with 512 coefficients.

94. (New) The signal processing system of claim 48, wherein at least one of the synthesis filter banks utilizes cosine modulation.

95. (New) The content distribution system of claim 49, wherein at least one of the filter banks generates polyphase components.

96. (New) The content distribution system of claim 50, wherein at least one of the filter banks utilizes cosine modulation.

97. (New) The method of claim 52, wherein said polyphase components are generated using a window length of 512 samples.

98. (New) The method of claim 57, wherein at least one of the synthesis filter banks is adapted to utilize cosine modulation.

99. (New) The method of claim 58, wherein at least one of the synthesis filter banks is adapted to transform sub-band components into polyphase components by cosine modulating said sub-band components.

100. (New) The method of claim 99, wherein said polyphase components are generated using a window length of 512 samples.

101. (New) The program product of claim 66, wherein at least one of the filter banks employs cosine modulation.

102. (New) The program product of claim 67, wherein at least one of the filter banks employs polyphase components.

103. (New) The program product of claim 68, wherein at least one of the synthesis filter banks generates polyphase components utilizing a filter with 512 coefficients.

104. (New) The program product of claim 69, wherein at least one of the synthesis filter banks utilizes cosine modulation.

105. (New) The information storage media of claim 71, wherein at least one of the filter banks utilizes cosine modulation.

106. (New) The information storage media of claim 72,wherein at least one of the filter banks utilizes polyphase components.

107. (New) The information storage media of claim 73, wherein at least one of the filter banks generates frequency components by cosine modulating polyphase components.

108. (New) The information storage media of claim 107, wherein said polyphase components are generated utilizing a windowing operation with 512 coefficients.

109. (New) The information storage media of claim 74, wherein at least one of the synthesis filter banks employs cosine modulation.

110. (New) The information storage media of claim 75, wherein at least one of the synthesis filter banks employs the generation of polyphase components.

111. (New) The information storage media of claim 76, wherein at least one of the synthesis filter banks transforms sub-band components into polyphase components utilizing cosine modulation.

112. (New) The information storage media of claim 111, wherein said polyphase components are generated using a window comprised of 512 coefficients.